

FIG. 1

Acetylated Forms of
[¹⁴C] Chloramphenicol

Unmodified
[¹⁴C] Chloramphenicol

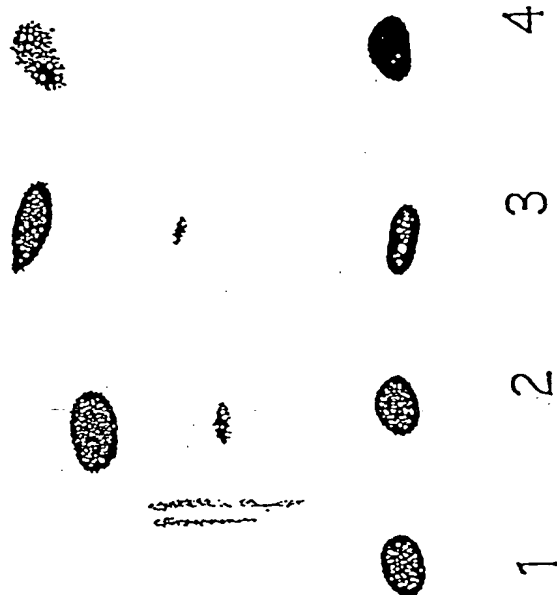
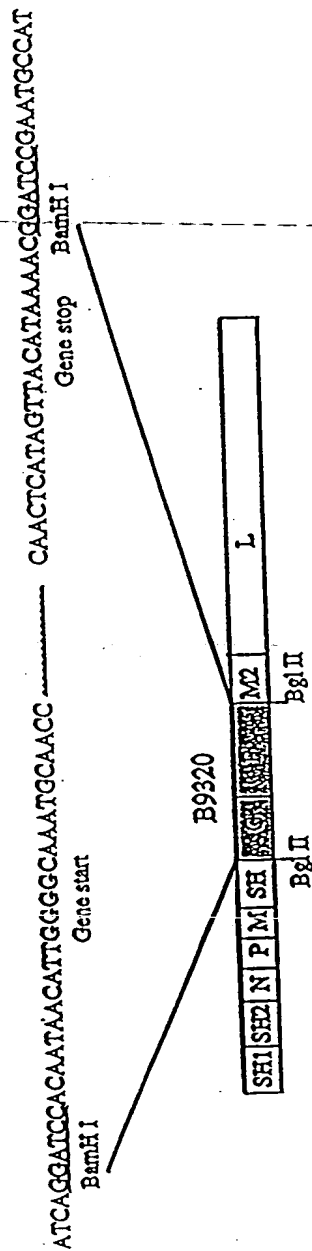


FIG. 2



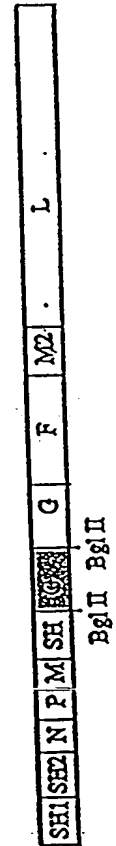
A. RSVB-GF



B. RSVB9320G-F/M2



C. RSVB9320G-SH/G



FIGS. 4A-C

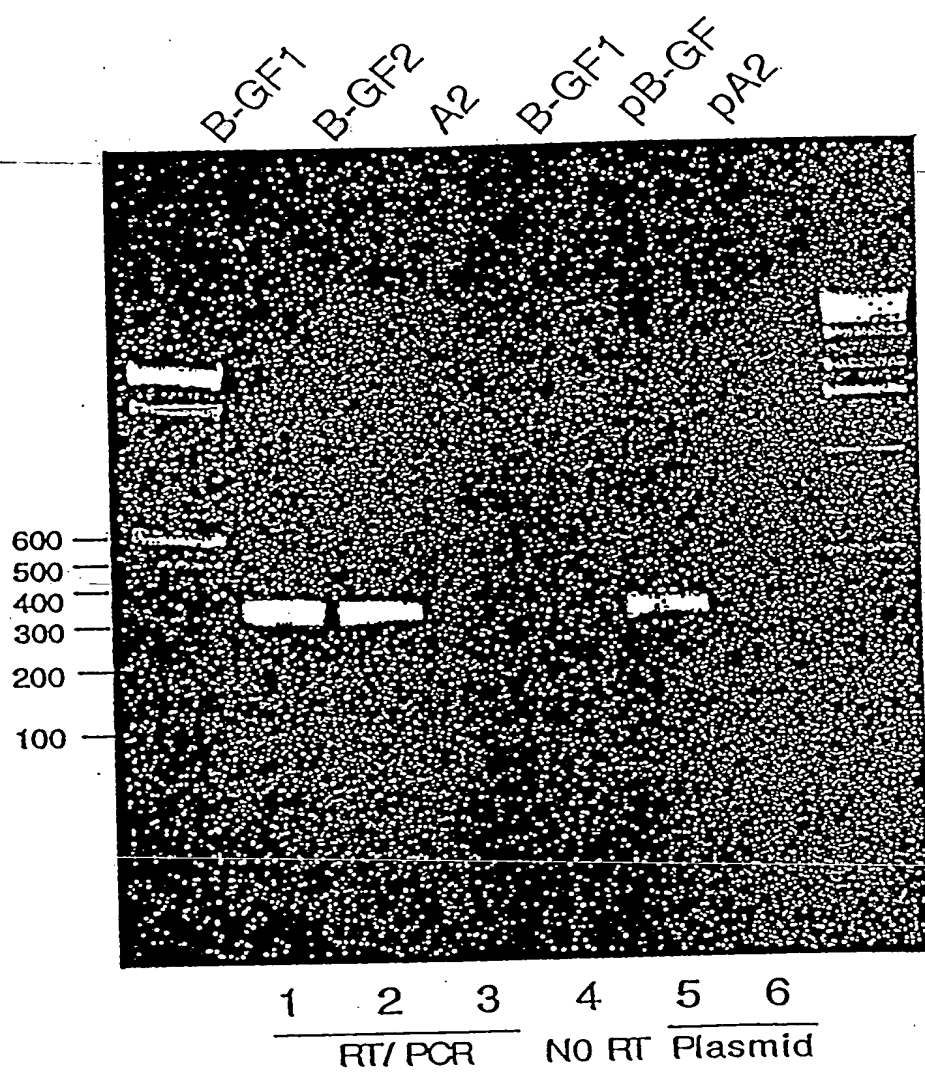


FIG. 5

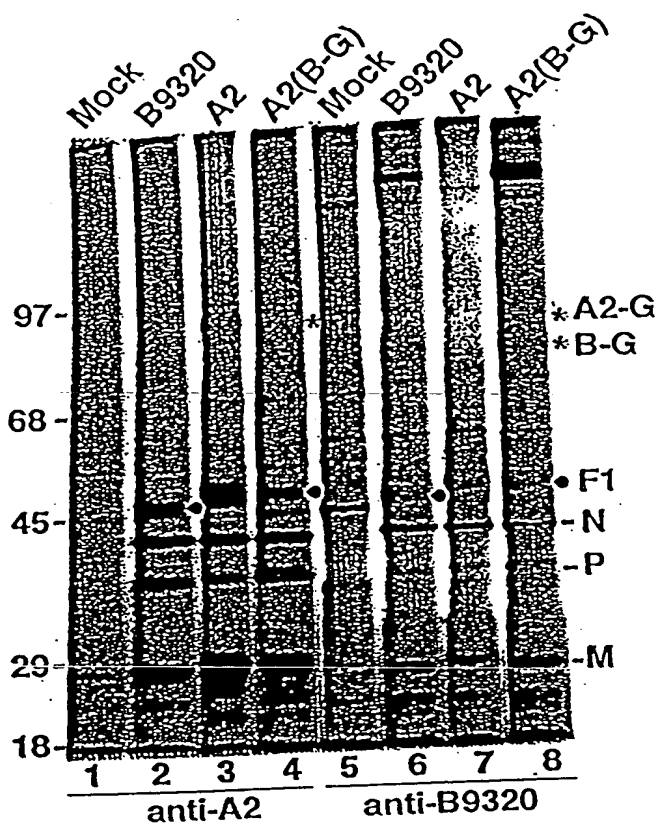


FIG. 7



FIG. 8

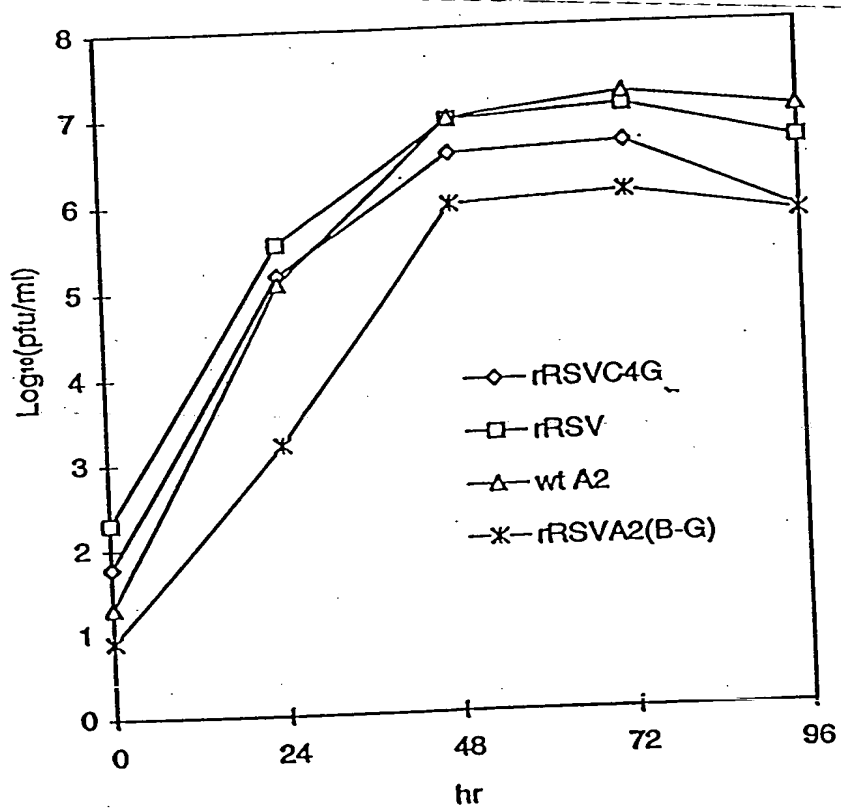


FIG. 9

| | | | | | |
|------------------|------------------|------------------|------------------|------------------|------|
| MDPIINGNSANVYL | DSYLKGVISFSECNA | LSGYIENGPLYLKNDY | TNLSRQNPFLIEHM | LKKLNITQSLISKYH | 75 |
| KGEIKLEETPYFQSL | LMTVKSMTSSEQIAT | TNLLKKIIRRAIEIS | DAKVYAAILNKLGLKE | KDKIKSNNGQDEEDNS | 150 |
| VITTIKDDILSAVK | DNQSHLKADRNHSTK | QKDTIKTTLKALMC | SMQHPSPWLHWFNL | YTKLNILITQYRSNE | 225 |
| VKNHGFELIDNQTL | GEQFTLNQYGCIVYH | KELKRITVTYVYNQFL | TKWDISLSRLNVCLI | TWISNCLNTLNKSLG | 300 |
| LRCGFNNVILTQLFL | YGDCLKLPHNEGFI | IIKEVEGFIMSLIN | ITEEDQFKKFFYNM | LNNITDAANKAQKNL | 375 |
| LSRVCHTLDDKTVD | NHNGRWIILLSKFL | KLKLAGDNMNNLS | ELYFLFRIFGHPMD | ERQAMDAVKINCNET | 450 |
| KFYLLSSLSMLRGAF | IYRIIKGFVNNYNRW | PTRLNAIVLPLRWLT | YKLNITPSSLELTE | RDLIVLSGLRFYREF | 525 |
| RLPKKVDLEMIINDK | AISPPKNLINTSPPR | NYMPSHIQNYIEHEK | LKFSSEDSKRRVLEY | YLRDNKFNECDLYNC | 600 |
| VNQSYLANNPENHVS | LTGTERELSVGRMFA | MQPGMFRQVQILAEK | MTAENILQFFPESLT | RYGDLELQKILELKA | 675 |
| GISNKSNNRYANDNAN | YISKCSLITDLSKEN | QAFRYETSCICSDVL | DELHGVSQSLFSLHL | TIPHTVITICTYRHAP | 750 |
| PYIGDHIVDLNNVDE | QSGLYRYHMGIEGW | CQKLWTEAISLLDL | ISLKGKFSITALING | DNQSIDISKPIRLME | 825 |
| GQTHAQADYLLAINS | LKLLYKEYAGIGHKL | KGTEYIYSRDMQFMS | KTIQHNGVYYPASIK | KVLRVGPWINITLDD | 900 |
| FKVLSIESIGSLTQEL | EXRGESLLCSLIFRN | VWLYNQIALQLKNHA | LQNNKLYLDILKVLK | HLKTFEFLDNIDTAL | 975 |
| TLVXNLPLMFGGDP | NLLYRSFYRTPDPL | TEAIVHSVFILSYT | NHDLKDKLQDLSDDR | LNKELTCIITFDKNP | 1050 |
| NAEFVTLMRDPQALG | SERQAKITSEINRLA | VTEVLSTAPNKIFSK | SAQHYTTTEIDLNDI | MONIEPTYPHGLRV | 1125 |
| YESLPFYKAEKIYNL | ISGTSITNILEKTS | AIDLTDIDRATENMR | KNITLLIRILPLDCN | RDKREILSMENLSIT | 1200 |
| ELSKYVREBSWSLSN | IVGVTSPSINYTMDI | KYTTSTISSGIIIEK | YNVNSLTRGERGPTK | PWVGSSTQEKKTMPV | 1275 |
| YNRQVLTCKQRDQID | LLAKLDWVYASIDNK | DEFMEELSIGTLGLT | YEKAKKLFPQYLSVN | YLHRLTVSSRRCPEFP | 1350 |
| ASIPAYRTTNVHFT | SPINRILTEKYGDEP | IDIVFQNCISFGLSL | MSVVEQFTNVCPNRI | ILIPKLINEIHLMKPP | 1425 |
| IFTGDVDIHLKQVI | QKQHMFLPKISLTQ | YVELELSNKLKSGS | HVNSNLILAHKISDY | FHNTYILSTNLAGHW | 1500 |
| ILLIQLMKDSKGIFE | KDWGEGYITDHMFN | LKVFENAYKTYLLCF | HKGYGKAKLECDMNT | SDLLCVLELIDSSYW | 1575 |
| KSMKSVLEQKVIKY | ILSQDASLHVRKGC | SFKLMFLKRLNVARE | TVCPWVNVNIDVHPTH | MKAILTYIDLVRMGL | 1650 |
| TNIDRIHIKNAHKEFN | DEFYTSNLEFYINVE | SDNTHLITKHIRIAN | SELENNYNKLYHPTP | ETLENILANPIKSN | 1725 |
| KKTLNDYICIGKNVDS | IMLPLLSNKLKIKSS | AMIRTNYSQDLVNL | FPMVVIDRIIDHSGN | TAKSNQLYTTTSHQI | 1800 |
| SLVHNSTSLXCMLEPW | HHINRENFVFSSTGC | KISIEYILKDLKTKD | PNCIAFIGEGAGNLL | LRTTVVELHPDIRIYI | 1875 |
| RSUKDCNDHSLPIEF | LRLYNGHINIDYGEN | LTIPATDATNNIHS | YLHIKFAEPISLFC | DAELSVTVNWSKIII | 1950 |
| EWKGVKVRKCKYC | NKCMLEIVKXHAQDDI | DFKLDNITILKTYVC | LGSKLKGSSEVILVLT | IGPANIFFVFNVVQN | 2025 |
| AKLILSRKNAFIMPK | KADKESIDANIKSLI | PFLCYPITKGINTA | LSKLKSVVSGDILSY | SIAGRNEVFNSKLN | 2100 |
| HKHMNLKWFNHLVNL | FRSTEINYNHLYMVE | STYPYLSSELNLSLT | NELKKLIKITGSLLY | NFHNE | 2165 |

Charged Clusters (Amino Acids that are underlined were changed to alanines)

Mutations in cpts-248/404

Mutation in cpts530

FIG. 10

| | | | | | |
|------------------|------------------|------------------|------------------|-------------------|------|
| MDPTINGNSANVYLT | DSYLKGVTSFSECNA | IGSVIENGPLYKNDY | TNLSRQNPLETEHMN | LKKLNTQSLISKYH | 75 |
| KGEIKLEETVYFQSL | LMTYKSMTSSEQIAT | TNLLKKIIRRAIEIS | DVKVYAILNKLGLKE | KDKIKSNNGQEDENS | 150 |
| VITTIKDDILSAVK | DNQSHLKADKNHSTK | QKDTIKITLLKXLMC | SMQHPSPSWLIHWENL | YTKLNNILTQYRSNE | 225 |
| VKNHGTLDNQTL | GFQFIINQYGCIVYH | KELKRITVTYTNQFL | TWKDISLSRLNVCLI | TWISNCINTLNKSLG | 300 |
| LRCGFNNVLLTQFL | YGCILKLFHNEGFI | IIKEVEGFIMSLILN | ITEEDQFRKRFVNSM | LNNITDAANKAQKNL | 375 |
| LSRVCHTLLDKTVSD | NIINGRWIILLSKFL | KLTKLAGDNNIANNLS | ELYFLFRIFGHEMVD | ERQAMDVAKINCNET | 450 |
| KFYLLSSLSMLRGAF | IYRIITKGFVNNYNRW | PTLRNAIVLPLRWLT | YYKLNTYPSLLELTE | RDLIVLSGLRFYREF | 525 |
| RLPKVDLEMIINDK | AISPPQNLIWTSFPR | NYPMSHIQNYTEHEK | LKFSSEDKSRRVLEY | YLRDNKFNEDLYNC | 600 |
| VANQSYLNNEHNVVS | LTGKERELSVGRMFA | MQPGMFRQVQILAEK | MIAENILQFFPESLT | RYGDLELQKILELKA | 675 |
| GISNKSNNRYNDNANN | YTSKCSITTDLSKEN | QAFRYETSICISDVL | DELHGVQSLFSWLHL | TIPHVITICTYRHAP | 750 |
| PYIGDHIVDLNNVDE | QSGLYRYHMGGIEGW | QCKLWTIEAISLDDL | ISLKGKFSITPALING | DNQSIDISKPIRLME | 825 |
| GQTHAQADYLLALNS | LKLLYKEYAGIGHKL | KGTEYIISRDMMQFMS | KTIQHNQVYYPASIK | KVLRVGPWTNTILDD | 900 |
| FKVSLESIGSLTQEL | EYRGESLLQSLIFRN | VWLYNQIALQKKNHA | LCNNKLYLDILKVLK | HLKTFNLDNDIDTAL | 975 |
| TLXANLPMFLFGGGDP | NLLYRSFYRRTPDFL | TEATVHSVFIISYTT | NHDLKDKLQDLSDDR | LNKFLTCTIITFDKNP | 1050 |
| NAEFVTLMRDPQALG | SERQAKITSEINRLA | VTEVLSTAPNKIFSK | SAQHYTTTEIDLNDI | MONIEPTYPHGLRVV | 1125 |
| YESLPFYKAEKIVNL | ISGTSKSTNILEKTS | AIDLTDIDRATENMR | KNITLLIRILPLDQN | RDKREILSMENLSIT | 1200 |
| ELSKYVRERSWSLSN | IVGVTSPSIMYTMDI | KYTTSTISSGIIIEK | YNNVNSLTRGERGPTK | PWVGSSSTQEKKTMPV | 1275 |
| YNRQVLTCKQORDQID | LLAKLDWVVASIDNK | DEEMEELSIGTIGLT | YEKAKKLFPQYLSVN | YLERLTVSSRRPQEFPP | 1350 |
| ASIPAYRTVNYHFDT | SPINRILTEKYGDED | IDIVFQNCISFGLSL | MSVVEQFTENVCPNRI | ILJEPKLINEIHLMKPP | 1425 |
| IFTGDDVDIHLKQVI | QKQEMFLPKLSLTQ | YVELEFLSNKTLKSGS | HVNSNLIILAHKISDY | FHNTYILSTNLACHW | 1500 |
| ILTIQLMKDSKGIFE | KDWGEGYITDHFMIN | LKVFENAYKTYLLCF | HKGYGKAKLECDMNT | SDLLCVLELIDSSYW | 1575 |
| KSMKSVFLEQKVIKY | ILSQDASLHRVKGQH | SEKLMFLKRLNVAEF | TVCPWVNVNIDYHPTH | MKAILTYIDLVARMGL | 1650 |
| INVIDRTHIKNKHFN | DEFTYNSNLFYINYNF | SDNTHLLTKHIRIAN | SELENNYNKLYHPTP | ETLENILANPIKSND | 1725 |
| KKTLINDYCIGKNVDS | IMLPLLSNKKLIKSS | AMIRTNYSKQDLYNL | FPMVVIDRIIDHSGN | TAKSNQLYTTTSHQI | 1800 |
| SLVHNSTSLYCMCLPW | HHINRENFVFSSTGC | KISIEYILKDLKIKD | PNCIAFTIGEGAGNLL | LRTTVVELHPDIRYIY | 1875 |
| RSUKDCNDHSLPIEF | LRLYNGHINIDYGEN | LTIPATDATNNIHWIS | YLHIKFAEPISLFCV | DAELSVTVANWSKIII | 1950 |
| EMSKHVKKCKYCSSV | NKCMILIVKYHAQDDI | DFKLDNITILKTYVC | LGSKLKGSEVYLVLT | IGPANIFPVFNVVQN | 2025 |
| AKLILSRTKNFTMPK | KADKESIDANIKSLI | PFLCYPITKKGINTA | LSKLKSVVSGDILSY | SIAGRNEVFSNKLIN | 2100 |
| HKHMNILLKWFNHVLN | FRSTELNYNHLYMVE | STYPYLSLNLNLSLT | NELKKLIKITGSLLY | NFHNH | 2165 |

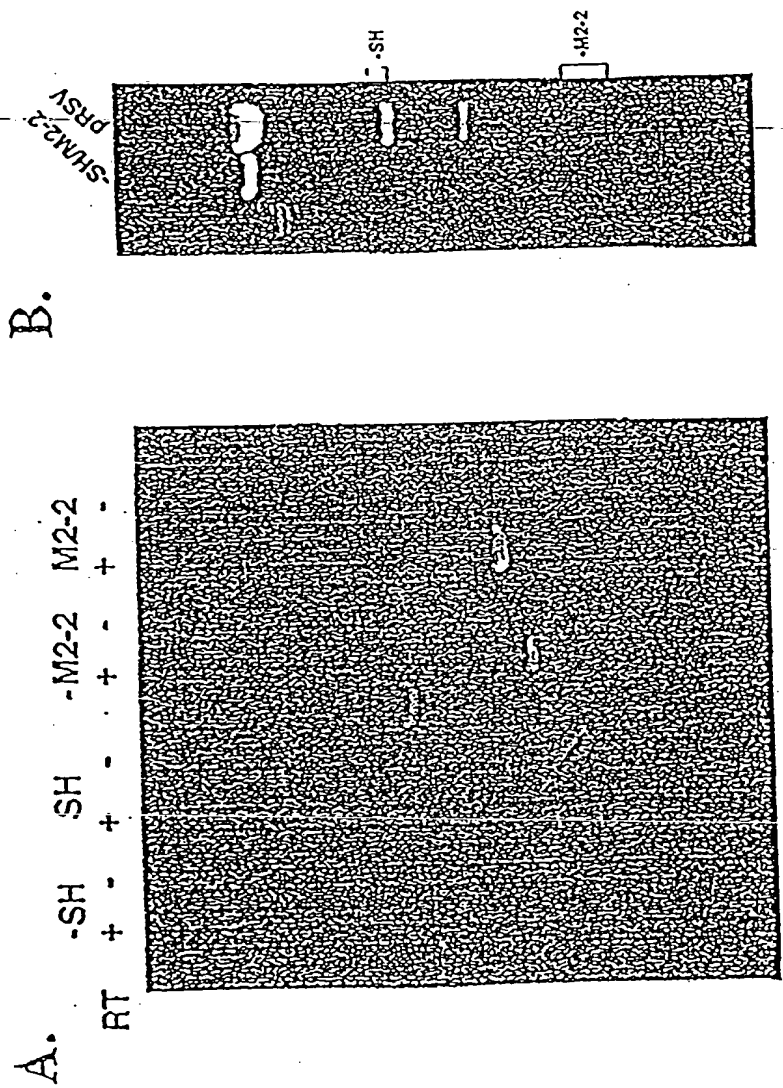
C Cysteine residues

C Cysteine residues that were changed to valine or aspartic acid

C Cysteine residue deleted

FIG. 11

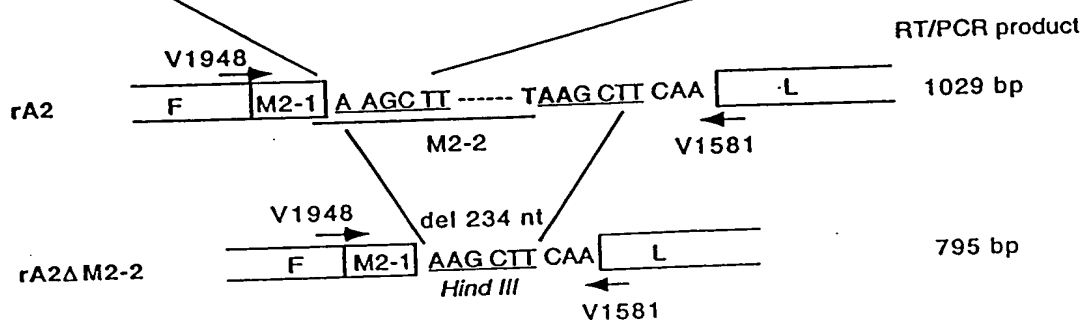
Downloaded from www.scribd.com



FIGS. 12A-B

A.

ACA AAT GAC CAT GCC AAA AAT AAT GAT ACT ACC TGA CAA ATA AGC TT
 T N D H A K N N D T T * M2-1
 M T M P K I M I L P D K * M2-2



B.

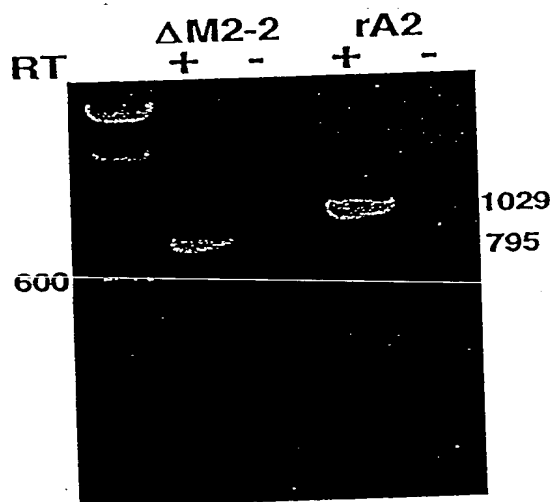


FIG. 13

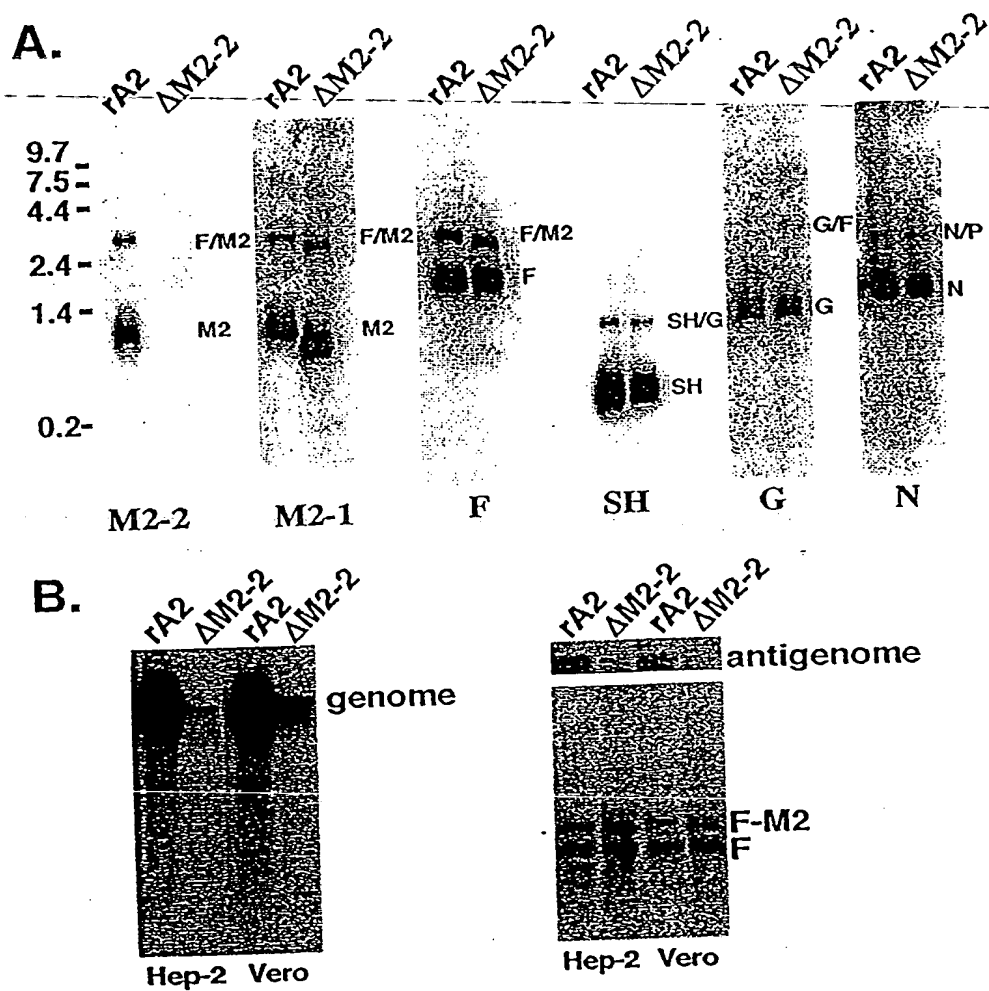


FIG. 14

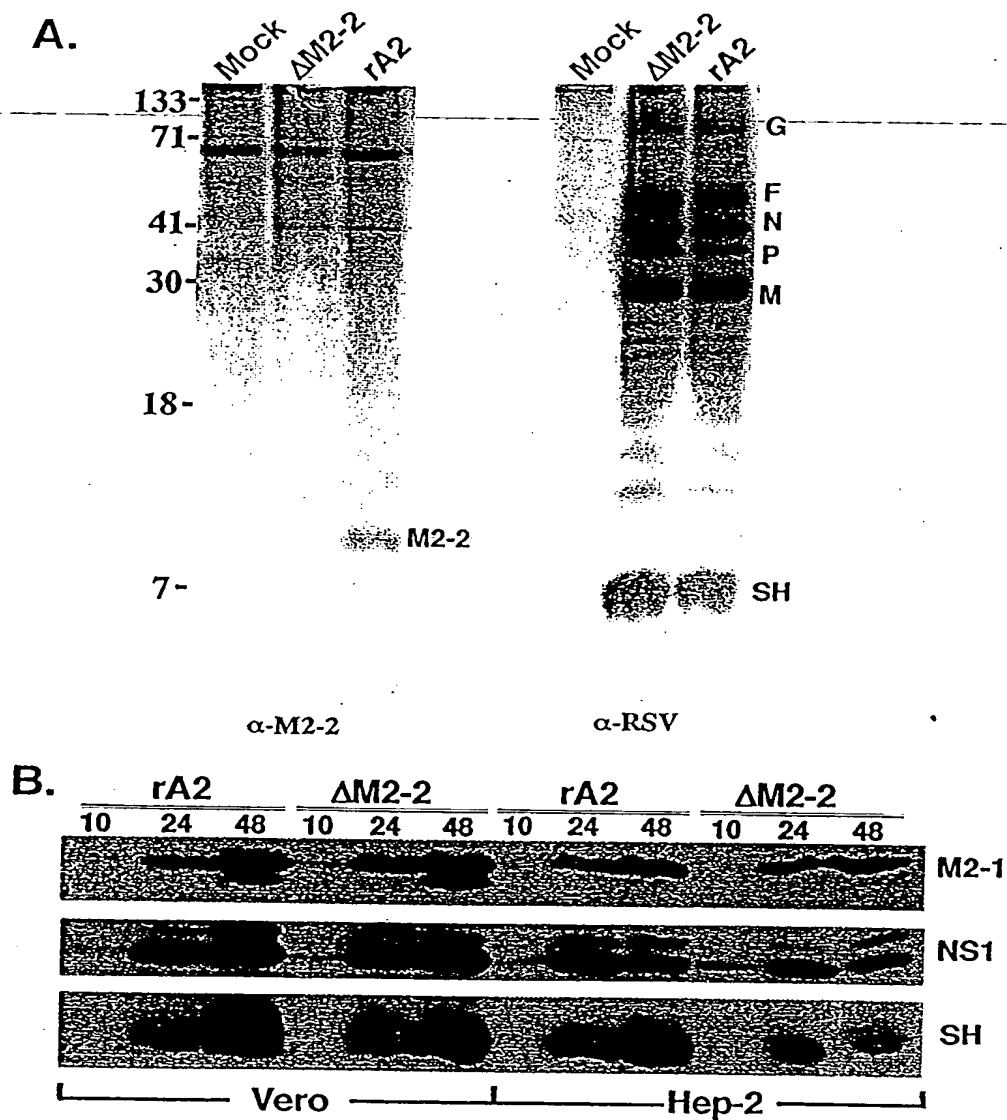


FIG. 15

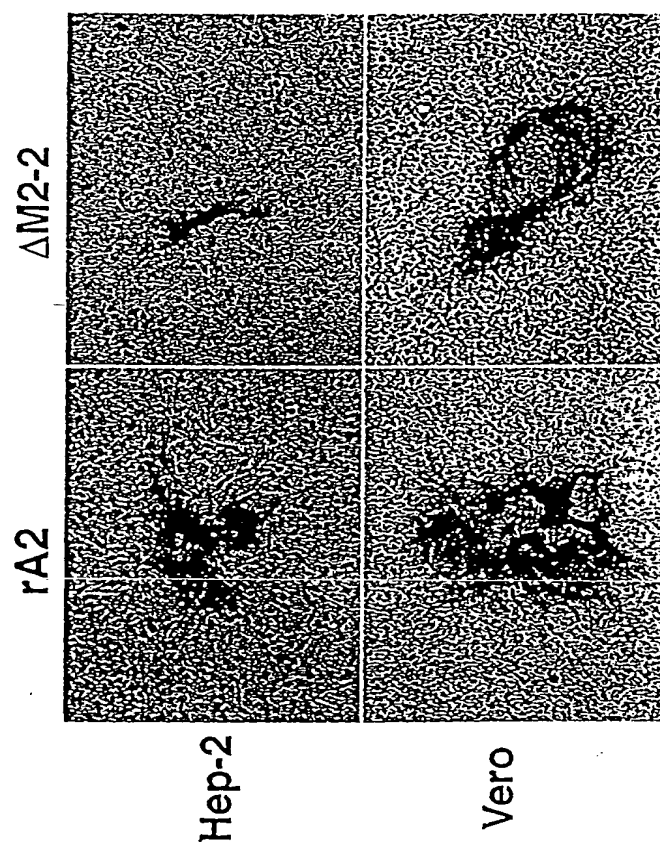


FIG. 16

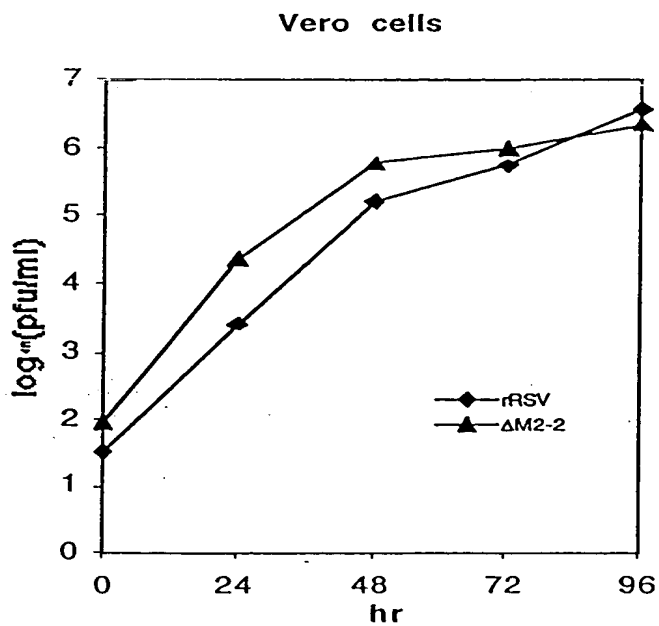
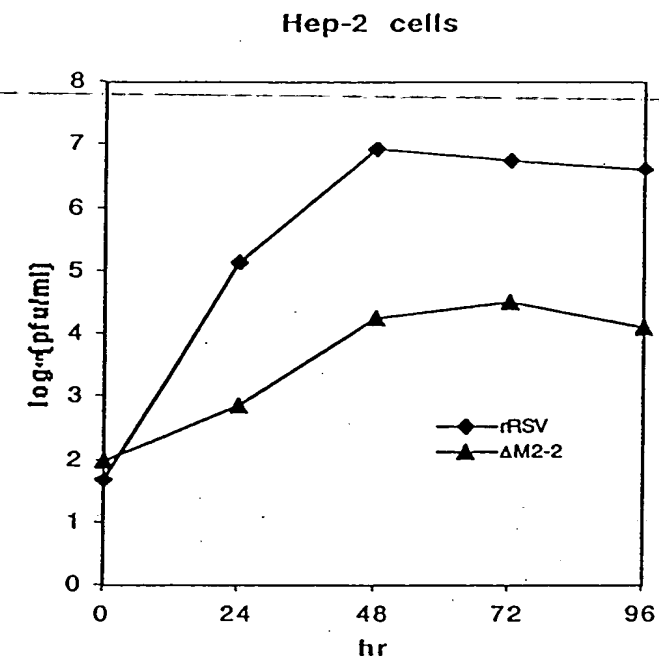


FIG. 17

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(Sheet 18 of 28)

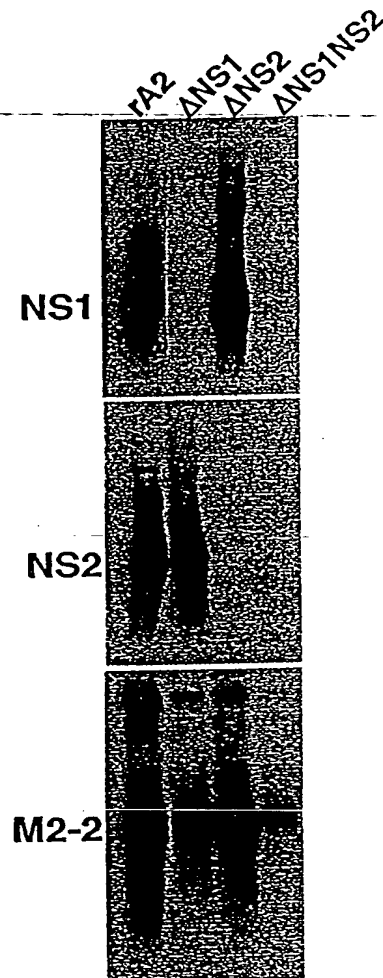


FIG. 18

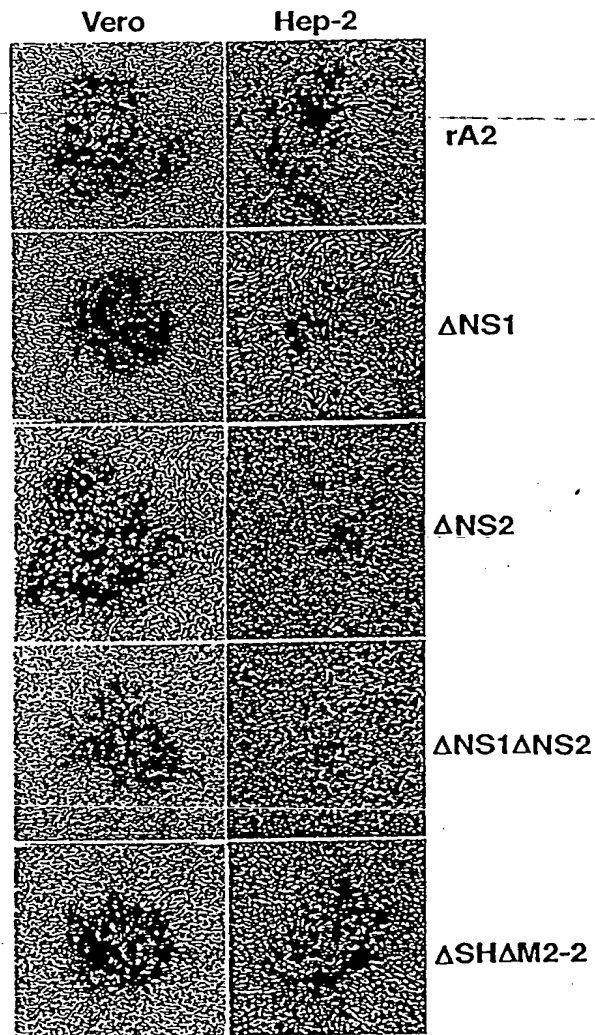


FIG. 19

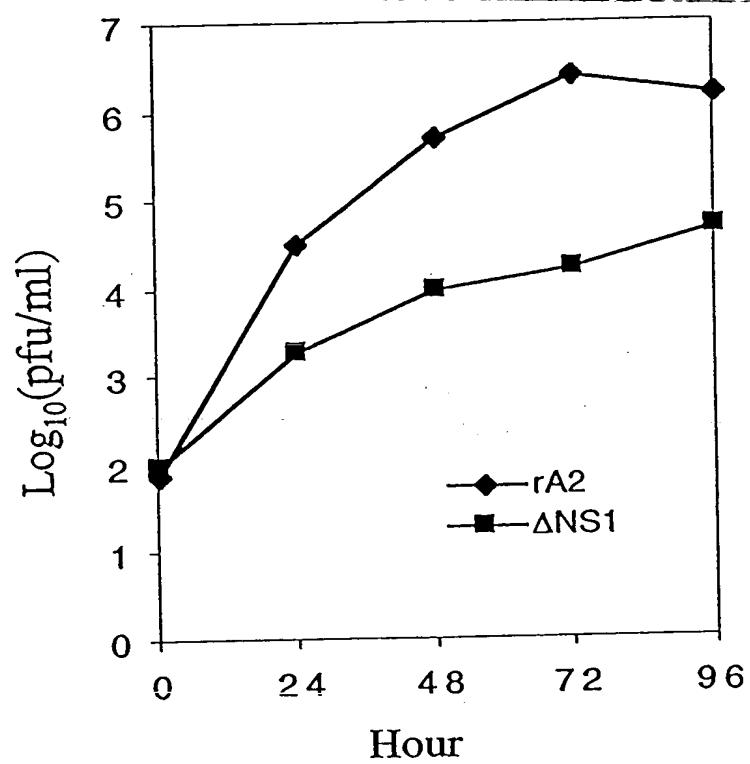


FIG. 20

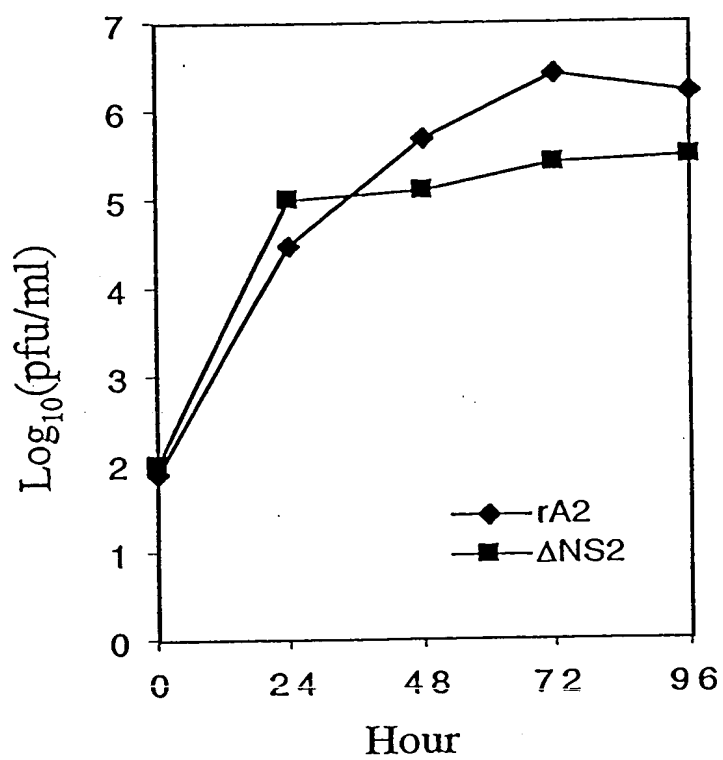


FIG. 21

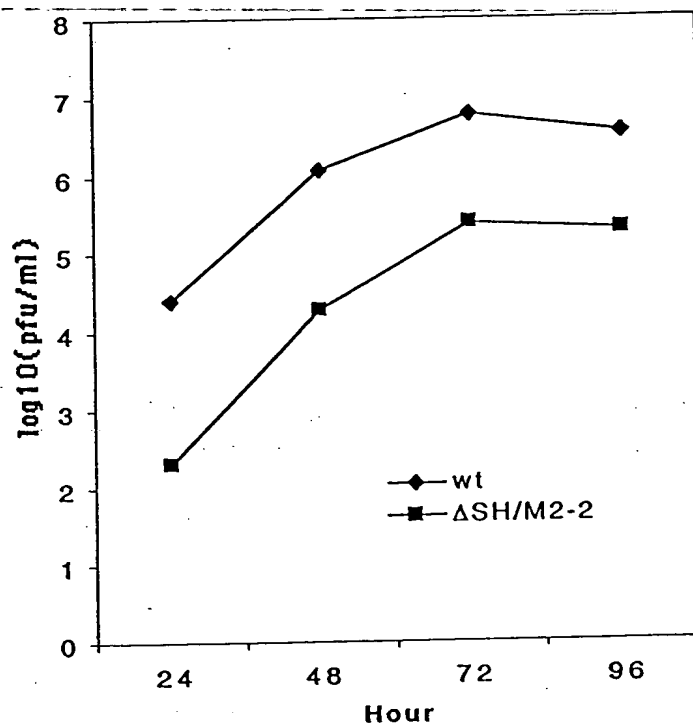


FIG. 22

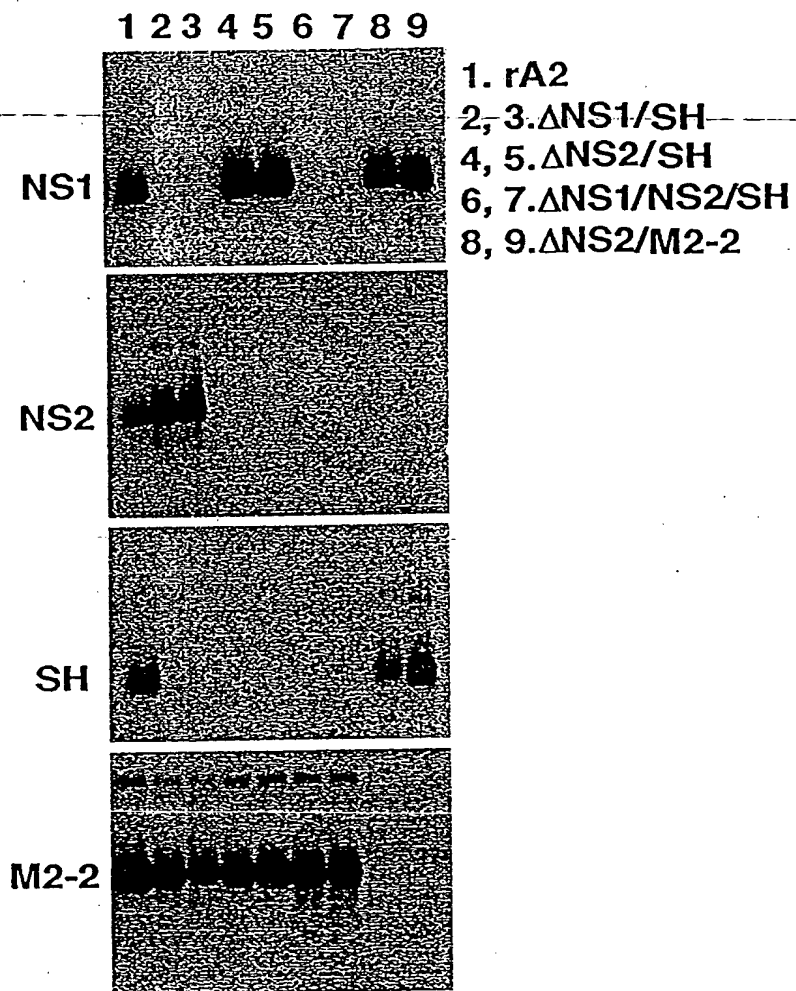


FIG. 23

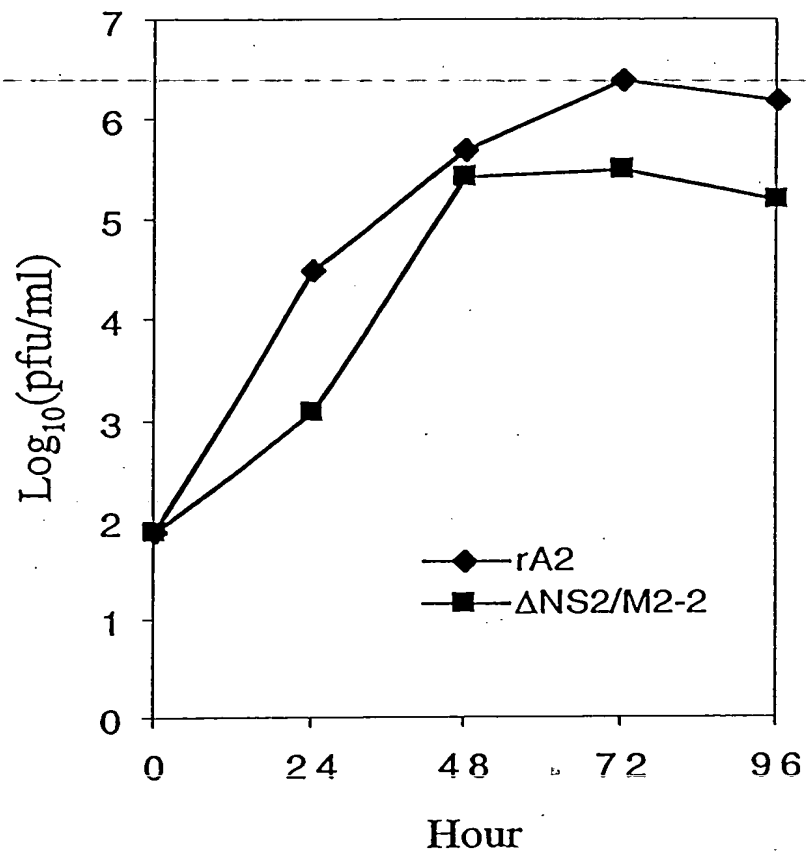


FIG. 24

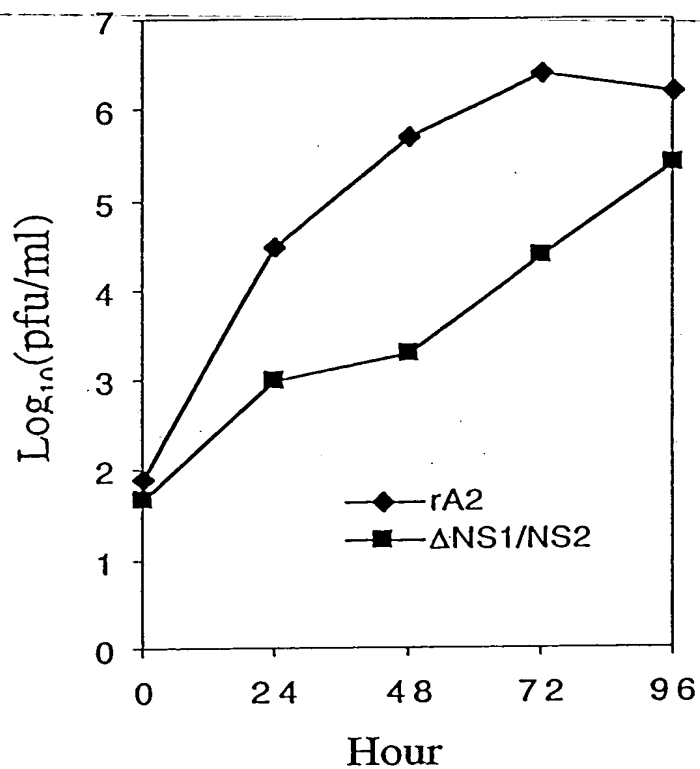


FIG. 25

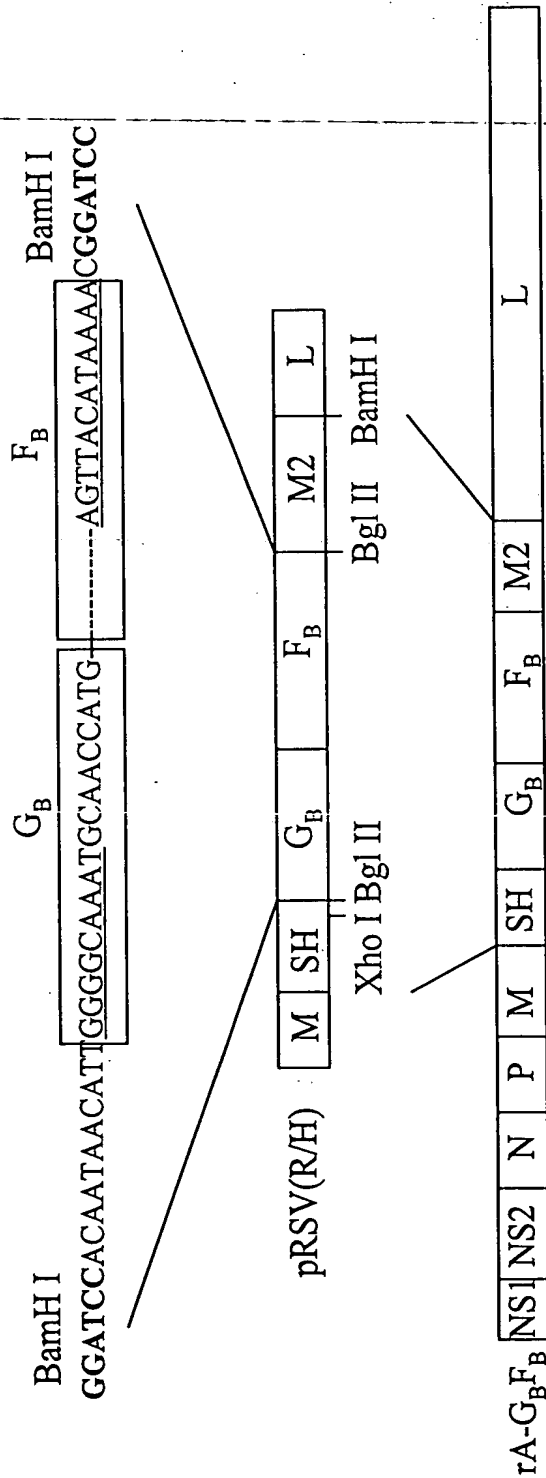


FIG. 26

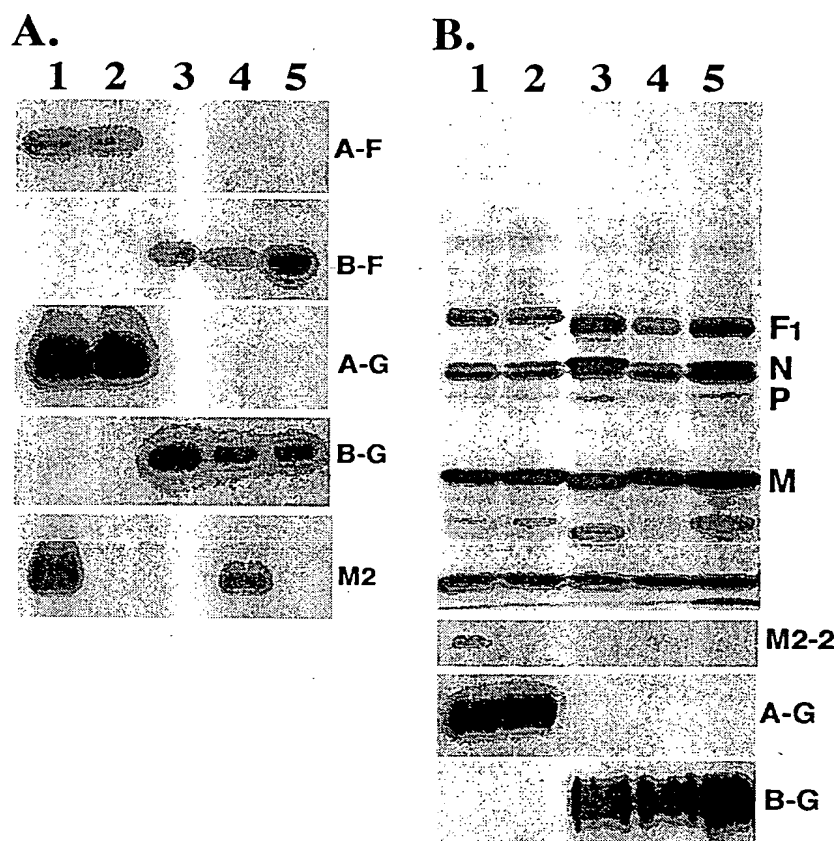


FIG. 27

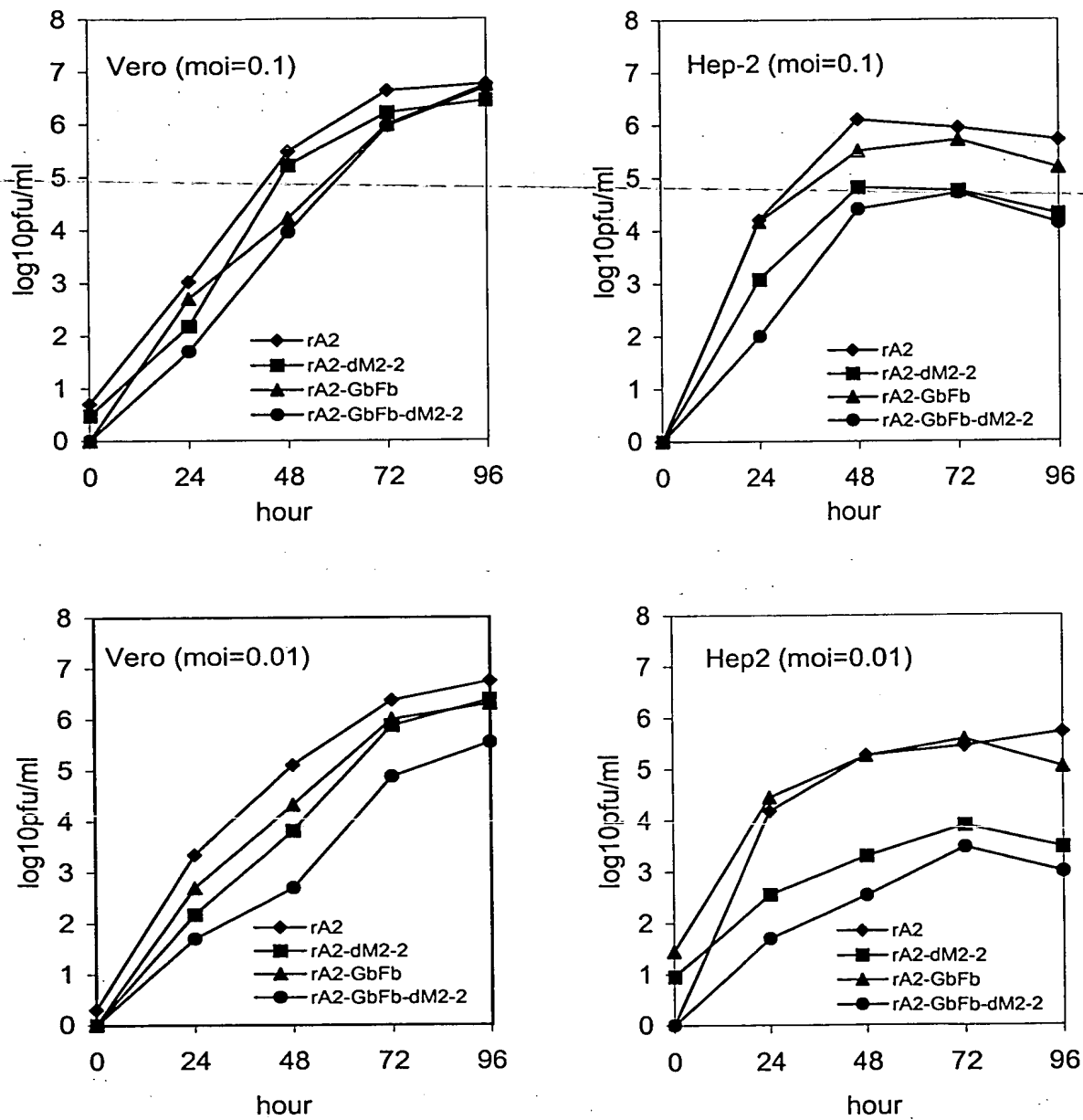


FIG. 28